Themes and challenges for service management solutions in Small and Medium Enterprises (SMEs)

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Abstract

This paper provides an exploratory case study within an SME that is currently selecting a service management solution (SMS) to enhance the existing SAP Business One systems. We examine existing business processes, legacy systems, potential solutions, and vendors with the aim of establishing the field of service management options available for an SME. The data collection centres upon in-depth interviews with SMS vendors supplemented by interviews with key staff members from the SME being studied.
The theoretic contribution of this paper is in identifying generic themes and challenges for service management solutions. Moreover, a practical contribution is in the critique of SAP Business One as a SMS option and in the proposal of a "Requirement/feature mapping" table that can be used for decision making by aligning organisational business process and systems functionality.

Keywords: SAP Business One, ERP, Service Management Solutions, SME

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Introduction

Small and Medium Enterprises (SMEs) constitute 99.9% of businesses in the UK and also employ 59% of the private sector workforce (ONSa 2010a). For the purposes of this paper we will use the UK's HM Revenue and Customs classification of an SME, namely an organisation with fewer than 500 employees (www.hmrc.gov.uk). With the trend for manufacturing activities relocating to competitive labour price markets, an increasing number of SMEs are moving their activities to service industries, for example offering servicing of printers and photocopiers. This service management focus in the UK economy is reflected in the 74% of the UK Gross Domestic Product (GDP) (ONS, 2010). Whilst these GDP figures include both private sector and government services, UK customer expectations in terms of service quality provision are increasing, regardless of the service provider's size. Consequently, within the last ten years, innovation in service industries has placed emphasis on improvements in service quality, customer management, service management and operations management (Hertog et al., 2010). Innovations in service management are increasingly driven by the need to improve service and these improvements are made possible using latest information technology advances such as mobile devices and increasingly web integrated e-business systems. There are a number of studies in service management (Balzarova et al., 2004; Kemp and Low, 2008; Reijers, 2006; Woo, 2007), yet despite this trend, the majority of these studies have little advice to offer to those interested in evaluating business needs and selecting technological features. This lack of relevant research could explain the reasons for failure in identifying appropriate applications within this sector (Asif

et al., 2009). Some authors argue that ERP software often lacks functionalities because the ERP solution contains a business model different from that of the organisation, thereby demanding business process reengineering to provide a good fit to business requirements (Light et al., 2001). Another challenge faced by the service management industry is the lack of adequate research in evaluating the needs of system implementation when compared to the manufacturing sector. Asif, de Bruijn et al. (2009) argue that traditional focus on customer satisfaction alone is no longer sufficient in assessing the quality of services provided to customers. Johnston (2005) evaluated thirteen papers on service management and concluded that only three covered service management operations, highlighting that there is a need for more research in this area (Frei, 2006; Johnston, 2005; Kim and Soo, 2010; Lofberg et al., 2010; S. H. C. Wan and Chan, 2008).

This paper provides an exploratory case study within an SME that is currently selecting a service management solution to enhance their existing SAP Business One systems. We examine existing business processes, legacy systems, potential solutions, and vendors with the aim of establishing the range of service management options available for an SME. The paper first presents a literature review of challenges faced by service management SMEs and then goes on to address the factors that affect the successful identification of a suitable service management solution (SMS). The research method section discusses the case study company overview and how the study was carried out. The paper finishes with a discussion of themes emerging from the options available for service management and concludes with the proposed framework for selecting the SMS and the vendors for a service operations SME.

Challenges within the service management SMEs

There are a number of service management definitions, but for this paper the following principles are adopted (Gronroos, 1990):

- understand the utility or value customers receive by consuming or using the offerings of the organisation and how services alone or together with physical goods or other kinds of tangibles contribute to this utility that is, to understand how total quality is perceived in customer relationships and how it changes over time;
- understand how the organisation (personnel, technology and physical resources, systems and customers) will be able to produce and deliver this utility or quality;
- understand how the organisation should be developed and managed so that the intended utility is achieved; and
- make the organisation function so that this utility or quality is achieved and the objectives of the parties involved (the organisation, the customers, other partners, society, etc) are met.

On the other hand, manufacturing according to Karana et al. (2009), is defined as the process whereby things are made using tools or manual labour for use and sale. This includes various

intermediary processes required for the production and integration of the product components. Unlike in the definition of manufacturing, that of service management makes no mention of products being produced; rather the emphasis is on utilities being received by customers and how that can be improved while meeting stakeholders' needs. Adopting from the definition of service management, examples of service delivery include activities such as routine maintenance and rapid response, which are either planned or scheduled on demand. Service management could broadly include activities undertaken by public sector organisations such as the police, postal services and ambulance service, however, the current study is focused on the private sector and SMEs.

Service industries, unlike manufacturing industries, require solutions that meet service specific tasks, which even contemporary manufacturing processes would fail to provide. For example, among the many routine issues faced by the service industry is the need to adequately match the hours paid to field engineers with the hours invoiced to customers for whom the service was provided. This is unique within the service industry since the majority of companies in the manufacturing sector are able to account for the time and components in a standardised manufacturing process (Helo et al., 2008). This can also become a problem in service management with the need to know what service parts were used for a particular job, hours travelled to the site, diagnostic time, etc. since these are not always predictable unlike in manufacturing.

The increasing reliance of service management on information technology dictates that organisations are becoming more and more reliant on some form of information systems. These systems could be as simple as electronic calendars and spreadsheets for smaller operators to web based service applications and mobile device supported solutions for larger operations. Due to the special practices undertaken by organisations in the service management field, a number of good practice models have been developed most notable perhaps is the international standard for service management: the International Organization for Standardization (ISO) 20000. This was necessary because of the need for service management organisations to reconcile their desire to provide the highest possible quality service with commercial pressures to achieve the economy, effectiveness and efficiency required to maintain profitability (Ottewill et al., 2000). The ISO 20000 formerly known as British Standard (BS) 15000 is the first standard for service management (S. Wan, 2009) although a British standard, it has been adapted worldwide and most suitably provides the

platform to mitigate the service management needs mentioned above. The need for integration of the overall business with information systems strategy highlights that information held in these systems is becoming a vital organisational asset thereby, delivering value for the organisations' stakeholders. There are a number of frameworks which help in developing "IT Best Practices" for IT Governance, these include the ISO 27000 series, Control Objectives for Information and related Technology (COBIT®), and the IT Infrastructure Library (ITIL). ITIL is focused on best practice of IT service management and is developed by the UK government. COBIT, on the other hand, is aimed at offering a high-level governance and control framework and is developed by a government independent organization – the IT Governance Institute (ITGI). The third related framework is the ISO 27000 series, this emphasizes information security management. All of these high level frameworks highlight the importance of conducting a thorough evaluation of business needs and this then informing the selection of the most appropriate IT solutions for the organization. Whist the process of selection is only one of several management stages, the current paper focuses on this stage only. Moreover, the frameworks mentioned above tend to be more appropriate for large enterprises and not necessarily for SMEs, who might have neither the resources nor the need to follow all of the stages proposed.

In addition to the IT best practice models, a number of researchers argue for thorough business process analysis before identifying and implementing appropriate solutions in a manufacturing industry (Fulton and Hon, 2010; Towers et al., 2005; Velcu, 2007), but little has been done to mitigate similar challenges when identifying and implementing appropriate IT solutions for a service providing SME. Poon and Wagner (2001) indicate that an estimated 70% of IT systems' implementation were considered a failure perhaps the most notable example being the London Ambulance Service, a service providing organisation, where failure can result in the loss of lives (Beynon-Davies, 1999). This therefore indicates that many implemented IS solutions even in service management, fail to be fit for purpose and this could include the selection of an unsuitable solution for the business processes and goals. Since service management is defined as the provision of utilities, then the problem of selecting the right service management solution is uniquely defined for the service industry. Hence, for service SMEs to be more efficient, there is a need to implement a service management application, which fulfils activities within various business processes in the organisation, although with some exceptions, the majority of studies conclude that previously

failed implementations deter organisations from implementing new systems (Fu et al., 2006). This has also been evident with the majority of service organisations seeing the identification and implementation of a technology to suit the organisation's business process as a potential risk.

This work addresses this problem, not only by providing a methodical process of IT solution selection but also by increasing management confidence while implementing an IT solution. This also mitigates the argument advanced by Asif, de Bruijn et al. (2009) that management inability to commit confidence to an IT system implementation is also responsible for some IT systems' implementation failures. Considering that mapping appropriate system requirements to solution features and functionalities would also increase management confidence, this model provides a tool for measuring requirements against how various solutions work around the requirements. Further on, the results are weighted making the process of selecting the most suitable IT solution a systematic one. The main objectives for carrying out the process of selecting an appropriate solution using this method are:

- Selecting the most suitable solution that allows a service providing organisation to fully carry on its business activities with little or no changes to its basic business objective;
- Increasing management and staff buy-in to the selection process by involving them in the whole decision process thereby increasing confidence in and commitment to the selected system;
- Reducing operating costs by automating manual activities where possible and increasing efficiency.

Research settings

Following the interpretive case study approach (Oates, 2006) we declare our backgrounds and provide the context of the company in which this study is conducted. Due to the page limit imposed by the conference template, these are kept to a minimum. The researchers are part of an academic team in a UK business school working on a two yearlong Knowledge Transfer Partnership (KTP) project. A KTP is a UK government funded scheme that allows academics to apply theory in practical settings and funds the employment costs of an associate who is part of the research team and is concurrently registered for a postgraduate research degree. The academic team's research expertise is based on two domains of knowledge – information systems and quality management. The associate who is immersed in the company for the duration of the project conducts the data collection and the academic supervisory team have regular meetings within a management framework.

The case study is taking place in an SME based in the North West of England, which was established in late 1980's – under the pseudonym Alpha Ltd. Alpha Ltd evolved from an original manufacturing only focus to the provision of specialist supply and maintenance services. The company has expanded through acquisitions and growth, which saw an increase in a number of disparate information systems used as part of the infrastructure. Due to the multiple failures of new IT systems selection in the past, the current company, as is supported by the literature, is conscious about repeating mistakes with a new system. The current main ERP system used is the SAP Business One version 2007, in addition to this, due to its

limitations, another system is used for the engineer booking calendar and yet another system for job costing.

The current research started by studying and documenting the existing business process. The process related data gathering was done by conducting interviews with key stakeholders and staff using the various systems at Alpha Ltd. Close involvement was important in this research because of its strength in providing an in-depth access to people, issues and data as suggested by Walsham (2006). Interviews with staff were organised so they did not cause any down time in the process, reproduced and validated by following the same process on the relevant system and given to staff to re-validate the documentation, following Miles and Huberman (1994). The data collected were used to produce a value stream mapping of the present and future processes state, identifying areas of waste within the present business processes. Moreover, features required by the company's strategic plans, such as enabling electronic time sheets submission by engineers etc, were identified for the desired features list.

Case discussion: solution and vendor mapping

A process was developed for the identification of an appropriate service management solution vendor. This involved an information gathering process in the company, as discussed above, resulting in the desired features list. Based on these requirements, vendors were identified and their solutions documentation analysed. This was followed by interviews and demonstrations by vendors focusing on assessing how their service management solutions matched the functionalities required. IT and business managers argue that ERP suites tend to have only one best in class application such as Peoplesoft being linked to having a good human resources module and Oracle with financials (Light et al., 2001), however, service operations require the combination of some of these best in class functionalities in particular in the SME market as we found in our case study.

The steps taken to invite vendors started with showing interest in their solution and inviting them in to Alpha Ltd to demonstrate how their solution matched what the organisation wanted. This was mostly in the form of a fact-finding meeting for the vendor to understand what features the organisation required as well as the organisation making its service processes clear to the vendor.

SMS Vendor Selection Process

Various steps were taken to review each and every solution and the vendors supplying them. As mentioned above, the solutions were critically evaluated to ascertain those that would provide a possible match to the features while assessing potential further problems in the business process. To get the functionalities completely mapped out, Table 1 was used to track the organisational needs to features available within each solution.

The solutions in table 1 are also grouped into two distinct categories, namely a) add-ons to SAP and b) third party solution. These categories are chosen because they are both possible solutions for the company. An add-on is a solution or application that enhances the functionality of a primary solution such as SAP Business One. In most cases various software companies other than the developers of the primary solution develop the add-ons, these usually have the same user interface but with some buttons, or functionality that is not available in the main system. Unlike the add-ons, third party solutions do not necessarily have the same look and feel as the main or primary solution. Another issue with third party

solutions is the integration with the existing primary solution, because in most cases both solutions run on different databases.

These ten solution options (table rows) are given a randomly allocated letter to make them anonymous and the data is correct as at November 2010. Only three solutions were able to share prices but these figures give an approximate indication of costs, namely tens of thousands instead of hundreds or millions as would be the case for some of the SAP R/3 options. The first row of the table is the weighting associated with each feature or functionality as decided by our case study company. However, any organisation will be able to use their values in these fields making the decisions uniquely appropriate to their needs. For example, "Job Costing", "Calendar Scheduling" are weighted at 10 – meaning they are essential; the "Hand held devices" feature is only rated at 5 – indicating the medium importance of this task and the ability for customers to log-in to check the service status online is the least important with a weighting of only 2. The next stage is for each feature to be marked out of 10, with 10 indicating that the feature is very well implemented and 0 that the feature does not exist. Marks in-between allow the indication of the quality of the feature in terms of speed and ease of use. The column "Service management" provides a generic assessment of the extent to which the solution meets all the necessary service management criteria. The individuals involved in the selection process fill in these subjective figures based on their impressions of solutions evaluations and their results are discussed and a final table is produced. Based on these results, a weighted total is calculated giving a quantitative dimension for decision-making.

As can be seen in this table, there are very few options that meet the majority of the current company's requirements. Also, the two highest-ranking options are both add-ons for SAP Business One. This on its own provides an interesting finding: although SAP Business One is not a service management tool with relevant add-ons it does still offer higher scores when compared to "best in breed" service management solutions available in the market for SMEs in the UK.

The vendors were interviewed during their solution demonstrations and although these meetings were not conclusive in terms of decision-making, the process was repeated and further clarification sought where necessary. A major issue that emerged during these demonstrations was that no-one solution was a perfect fit and a level of customisation was required to get the solution to fit adequately into the specific business processes of the current business. When a decision was made on short-listed solutions and vendors, a scoping proposal had to be drafted for the unique features needed. It is highly important to understand the costs associated with the solutions and the extra customisations which would need to take into account any future product upgrades and the subsequent need for core re-write.

With this further information on the short-listed solutions and vendors, an extensive review was carried out with representatives of all stakeholders of the project to identify the most suitable, cost effective and reliable solution and vendor. The significance of the vendor was found to be crucial. Despite the 'off-the shelf' nature of the majority of software products, a reliable vendor offering after sales support is a must for any business. It transpired from the vendor interviews that there is a feeling amongst SAP Business One resellers that any company that supports this entry level SAP product needs at least 30 customers in order to justify investment in a new member of support staff. This disadvantages any small resellers who might not have these numbers and with low profit margins might struggle to make a viable business model on this product alone.

Identifying the final solution then leads to signing off and then into the solution implementation and after sales support.

Service management solution identification factors applied

The following are some of the themes that emerged from the primary data collection and are supplemented with the relevant literature that helped us in guiding the selection process.

Vendor	Solution	Cost	Service Management	Job Costing	Calendar Scheduling	Service call Mngt	Time sheet entry	Equip link Vs Site maint.	GPS	ERP	Vendor Knowledge evaluation	Integrates with SAP	Email Functiona-lity	Human Computer Interface	Indv. Acct Activity	Reporting	Hand held	Cust-omer Login	Total weighted Average
	Weighting:	**10**		**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**9**	**8**	**8**	**8**	**8**	**5**	**2**	
	SAP business one add-ons																		
A	A Solution	£36380 for 30 Eng	25%	0	0	0	0	0	0	0	0	10	0	0	0	10	10	0	**220**
B	B Solution	£290 & £180 per User	40%	10	0	0	10	0	0	0	0	10	0	0	0	10	10	10	**440**
C	C Solution	Not specified	70%	10	3	10	10	8	10	10	7	10		10	10	10	10	0	**1060**
D	D Solution	Not specified	85%	10	10	10	10	10	10	10	10	10		10	10	10	10	0	**1180**
	Third Party Service Software																		
E	E Solution	£70000 + 18%pa	70%	0	10	10	5	0	10	5	0	3	10	2	0	10	10	10	**673**
F	F Solution	Not specified	75%	10	10	0	10	0	10	0	0	0	10	0	10	10	10	10	**710**
G	G Solution	Not specified	50%	10	10	0	0	10	10	0	0	0	0	0	0	0	10	10	**470**
H	H Solution	Not specified	20%	0	0	10	0	0	0	0	0	0	0	0	0	10	0	10	**200**
I	I Solution	Not specified	30%	5	5	5	10	10	10	0	5	5	10	10	10	10	10	0	**915**
J	J Solution	Not specified	15%	0	0	10	0	0	0	0	0	0	0	0	0	0	0	10	**120**

Table 1 Requirements/feature mapping model

Importance of post-implementation phase of a system: Yu (2005) in his research, focused on success in the post-implementation phase of a system and it being a crucial indicator of successful system implementation. Velcu (2007) further underpinned this by saying that the journey of system implementation does not end with the "going life" of the desired system.

Alpha Ltd learned this lesson from previous systems implementations. Most importantly this is the reason why the vendor evaluation itself is part of the selection process. It is only when the systems were used to full capacity and further customisations were requested by company staff that it was felt that the vendors of previous systems were not able to provide what was required. This is also one of the reasons that the current project is scheduled to go on for several months beyond the implementation date during which time the project team will be there overseeing the new system being used.

Management "buy-in": While focusing on management buy-in, ease of use of the specific system or application and general human factors (Fu et al., 2006; Fulton and Hon, 2010; Tsinopoulos and Bell, 2010), these studies failed to critically analyse how, during the selection process of the potential system, features were matched to the business process activities. In addition, the major frameworks as discussed in the literature section – ISO 27000, COBIT® and ITIL are all very heavy in terms of documentation and procedures that require their maintenance. For an SME these frameworks represent a major administrative overhead and do not fit with the limited resources and organisational needs. However, the essential strategic business alignment of business development with IT, as all these frameworks advocate is replicated on a small scale for example, the need to increase the number of engineers and efficiency of their allocation feed directly in the selection criteria of the software system.

Implementation history (success/failure): While it is a priority for an organisation to identify the most suitable application for its business processes, past failures in systems implementation can become a hindrance to future implementations. Trunick (1999), in his survey reveals that 40% of system implementations, such as ERP systems, achieve only partial implementation and 20% are even classed as a complete failure, restricting the system usage to 40% or even less. (Ptak and Schragenheim, 2004) further supported the statistics on failure in systems implementation by saying that between 60 and 90% of implemented systems such as ERP systems end up being less effective when compared with the reasons for them being implemented. Failures associated with systems implementation are not peculiar to SME's. Leading multinationals such as FoxMeyer Drug, Dell Computers, Boeing, Mobil Europe, Kelloggs and Nestle have either failed in their systems implementation or suffered from ineffective systems implementation (Yu, 2005). However, it is not all gloom, since some organisations such as Eastman Kodak (Stevens, 1997), Panasonic, Hewlett-Packard (Yu, 2005) and Cisco Systems (Chen, 2001) have evaluated their systems implementations as being successful. Alpha Ltd has the unfortunate history of having experienced several systems, which did not live up to expectations. Even the last SAP Business One system selection was supposed to be the final system that would replace all the issues raised by Alpha Ltd in terms of its operations. This was not the case and some legacy systems are still being used since SAP Business One does not provide the necessary features. Whilst technological innovations – such as the cost-effective availability of mobile phones - drive opportunities for operational

change, there is an expectation that new systems would be “better” than the older legacy options. However, the reality is that some good features don’t feed into the latest versions so a long-term view of the product’s development is also taken into account when selecting the most relevant option.

Lack of project scoping: This research also emphasizes the importance of project scoping in selecting the most appropriate SMS by investigating and addressing broad and specific issues that need to be addressed by the required system as suggested by King and Newman (2009). Duggan and Blayden (2001) identified that difficulties encountered from the perspective of operations and maintenance can be mitigated if better scoping is done during the identification of the implemented solution. In our study, this was one of the main reasons for what the organisation termed as failure in implementing appropriate systems in the past. While this was identified within our project, other studies also support that what is identified as failure in operations from implemented system usage can be linked to the lack of scoping or incorrect scoping at the beginning of a project. However, the question is - how can it be mitigated? In our study at Alpha Ltd we mitigated it by employing the potential systems users during the process of scoping to access their needs and technical knowledge and this was used in analysing features such as human computer interface (HCI). This proved to be a good way of getting input from the users and getting staff “buy-in” by being involved in the product selection.

Lack of adequate vendor knowledge: O’Reilly and Paper (2009) looked at vendors’ motivation and goals towards developing an IT solution with a focus on electronic customer relationship management and international van-based service company. Although implementation failures have not always been linked to vendors, they noted that vendor knowledge of both the system being implemented and the company business process is of great importance in achieving a successful implementation and usage of the system. The main reason for this is that a large number of ERP systems and IT solutions are being developed, sold and implemented by vendors known as partners (Fjermestad and Romano, 2003; Kennedy, 2006). SAP, for example, being one of the world’s leading providers of business software solutions, delivers its software product mostly via more than two thousand four hundred (2400) certified partners (www.sap.com). It is therefore of great importance to an SME to know what knowledge of the system the partner has and how familiar they are with service operations before choosing a partner. Alpha Ltd have in the past experienced that the service offered by their partner was lacking in some respects in terms of its ability to solve a number of technical issues. This is an important aspect when selecting a vendor who is essentially a re-seller without the full knowledge of the product or perhaps the ability to help with technical matters. Problems were therefore often escalated to SAP resulting in some increased time delays and unnecessary system outages.

Discussion: Benefits expected from the implementation

With service-oriented architecture (SOA) which SAP has adopted, enterprise services can now leverage SAP solutions in conjunction with partner solutions and other bespoke solutions to provide a seamless integration to build new, flexible, and more service specific innovative solutions. Although, this is a great effort on the part of SAP, it also highlights the acknowledgement of a gap in service management process inefficiency in SAP Business One and its ability to accomplish service management specific operations. In general, the benefit that SMEs have derived from service

management technology have been noted in previous studies in terms of: improving the organisational strategy, profitability and machine utilisation (Fulton and Hon, 2010). However, there are more service management specific benefits an SME can gain when appropriate service process automation is achieved. This is the gap in the literature that has been identified in this work by extensive research within an SME and other service related organisations involved in various meetings.

Engineers' efficiency: Managers in organisations have confirmed that CRM and ERP solutions have been produced with features more ideally suited to manufacturing and retail operations (Bealby, 2010), making ERP systems less efficient in meeting the requirements of service management operations. SAP R/3 (the high end enterprise product offered by SAP) has been recognised as an efficient ERP solution and is used in the UK by Royal Mail Group Property Holdings (Roberts and Daker, 2004). Other authors, such as Martin and Cheung (2000), describe SAP R/3 as a solution with extensive functionalities and cover full range of business requirements. However, SAP Business One, which is a version of SAP suitable for SME's, fails to make provision for more than seven service engineers in its diary/scheduler, a basic common functionality that is predominately used in service operations. This therefore, limits service management users from managing more than seven engineers in its calendar/scheduler using SAP Business One, hence this is one reason for implementing a solution that effectively allows a service organisation to manage more than seven engineers if they need to.

Measuring customer satisfaction: In service delivery, it is important to get a) a response from the engineers while on the customer's site as well as b) how satisfied customers are with the services delivered. Using a service management solution, which incorporates the use of a personal digital assistant (PDA) and handheld devices, offsite staff can collect information from customers, which are relayed to the office in real-time. This can include customer satisfaction levels on individual jobs, which serves an important purpose when audits are being conducted.

Increase cash flow: With the implementation of an efficient service solution, the time between job completions, invoicing the customer and receipt of payment from customer can be greatly reduced.

Delay in invoicing customers only creates delays in customer making payment, which in the long run reduces cash flow. However, if the completion of a job on the customer's site is updated using a service solution in real time, then the back office can effectively invoice the customer immediately. This has been very effective in reducing back office paperwork and the number of hours spent in processing documents.

Better stock management: With the difficulty of managing stocks on site, it could be even more difficult managing off site stocks such as those contained in either vans or other offsite warehouse locations. With the use of an efficient service management solution, stocks contained in vans and other warehouse locations could be adequately management by keeping a live electronic record updated with the main system. Low stock levels can automatically trigger a re-order prompt and replacement when needed. To the engineer, this gives them more time to concentrate on providing customer services.

Fewer customisations: Most IT vendors propose or offer solutions that would require a substantial amount of customisation to meet an organisation's goal. This is one great

benefit of SOA adopted by SAP Business One. While this can be useful, it exposes the organisation to being liable to pay for customisations, increases the possibility of glitches within the system and makes the final solution more complicated to understand and use. Therefore, selecting an off-the-shelf solution that fits most required functionalities reduces the need for customisation, which could also reduce the need to further complicate the solution's maintenance.

Integration: Regardless of SOA, organisations using disparate IT systems always face the risk of these systems not interacting with each other in terms of data and information transfer. Some systems claim to integrate with other solutions, however, for communication of data and information within these different solutions data might need to be converted into another specific format for communication or the process of communication could be time consuming. This again strengthens the case for having a single solution that is a best fit for the organisation in terms of achieving its business goals and strategies.

Conclusions

Mapping the current state of a business process is useful but not enough to make a decision on the most appropriate ERP solution. This paper documents the main tensions that an SME faces when using a SAP Business One version 2007 system. Despite the success of the SAP R/3 in service management, an SME has to examine the features very carefully before committing to the SAP Business One system and consider the way its limitations are to be addressed. Due to SAP Business One's manufacturing focused background, there are several limitations of basic service management functionality as discussed above. This research supports previous studies that criticise off-the-shelf ERP systems since they encapsulate processes of those systems that were current at the time the software was initially developed. Manufacturing focused processes will stifle any radical innovation in terms of service management and systems logic designs. However, when evaluating service management only systems aimed at the SME market we are also surprised to find that not many of these offer a comprehensive solution. For any company optimising its service management business processes one other option remains and that is to develop a custom made system but this is often beyond the average SME budget. Therefore, software vendors need to take account of the latest advances in service management solutions to meet the increasing expectations of improved service management for SMEs.

With the processes discussed above, a theoretical decision making tool is provided for a service management focused organisation and should serve as a method to enable them in practice, to identify and implement the most suitable IT solution for their needs using available resources. Finally, it is important to mention that having identified processes as being extremely important, it is equally important to have someone with knowledge of both IT and the organisation's business processes to manage and be responsible for the project. Whilst these tools provide some prescriptive options for anyone willing to go through a service management systems selection, the organisational context and the scale of organisation needs to be considered. For larger organisations, a substantial framework such as that offered by COBIT® or ITIL are more appropriate, although these were felt to be too cumbersome for Alpha Ltd.

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